

REMARKS

Status of Claims

Claims 1-28 are pending. Claims 19-28 have previously been withdrawn from consideration, leaving claims 1-18 under consideration.

Claims 1-18 were rejected under 35 U.S.C. §103(a), (hereinafter, "Section 103(a)") as being unpatentable over Colbert et al. (U.S. Pat. 6,756,026, hereinafter "Colbert") in view of Haruta et al. (U.S. Pat. 6,110,291, hereinafter "Haruta").

Section 103(a) Rejections

Claim 1

Claim 1 recites, among other features, "a radiating-energy source configured to directly heat catalyst on at least one die via simultaneously emitted multiple prongs of radiating energy". The Office Action conceded that "Colbert et al. does not teach multiple radiating energy beams (prongs) or the presence of a die". Applicants respectfully agree.

The Office Action contended, however, that "it would have been obvious to one of ordinary skill in the art at the time of the invention to use a beamsplitter as taught by Haruta et al. in the Colbert et al. system because this would yield multiple beams and hence decrease the processing time required to form a nanotube product." Applicants respectfully disagree.

FIGS. 10 and 11 of Colbert show the apparatus of Colbert that is presumably being used to reject claim 1. As can be seen in FIG. 10 of Colbert, the only workpiece disclosed or even suggested for Colbert's system is a long, thin fiber 1004 that can be grown arbitrarily long. The fiber is contemplated as being capable of being arbitrarily long, such that that it can be collected by a "take-up roll 1106", as shown in FIG. 11 of Colbert. The term "fiber" in Colbert refers to "an aggregation of substantially parallel carbon nanotubes" (Colbert, Abstract).

Colbert describes and shows a single laser 1006 for heating "the growing tip of the fiber 1004" (Colbert, col. 26, lines 37-38). Colbert specifically teaches

only that a single energy source is to be used to heat the entire growing fiber tip. For example, Colbert teaches a single “laser 1006 focused at the growing end” (Colbert, col. 26, lines 41-42; Colbert, FIG. 10), and “[f]or larger fibers, heat can be supplied by microwave energy or R-F energy, again localized at the growing fiber tip” (Colbert, col. 26, lines 43-45).

Applicants respectfully point out that the workpiece (i.e., the fiber 1004) of Colbert fundamentally does not even have any “multiple work regions”, as far as Colbert’s laser is concerned. On the contrary, the only work region in Colbert is the growing end of the fiber 1004, which requires only a single laser (or microwave or R-F energy) beam. Applicants respectfully submit that one would not even know, even with full, impermissible hindsight, how to begin to shoehorn claim 1’s “simultaneously emitted multiple prongs of radiating energy” into the system of Colbert. There is only one work region, and only one take-up roll 1106, etc., and so one would wonder: what would the additional prongs of radiating energy be used for?

In short, Applicants respectfully submit that there is no suggestion, and no motivation, and no expectation of success to add the missing source of “simultaneously emitted multiple prongs of radiating energy”, as required by claim 1, into Colbert.

Accordingly, Applicants respectfully submit that claim 1 is allowable.

Claim 1, further discussion

The Office Action mentioned that “[d]uplication of parts was held to have been obvious[;] In re Harza 124 USPQ 378”. Applicants respectfully and duly note the Harza case. Applicants, however, respectfully point out again that:

... [regarding] MPEP § 2144.04 and In re Harza 274 F.2d 669, 124 USPQ 378 (CCPA 1960). There is no per se rule that duplication of parts would have been obvious at the time the invention was made to a person of ordinary skill in the art; application of such rule is improper, since it sidesteps the particularized obviousness inquiry required by 35 U.S.C. § 103 and necessarily produces erroneous results.

[Opinion, pages 6-7, Board Of Patent Appeals And Interferences (BPAI) on Oct. 28, 2004 in *Ex parte* Ralf Allner And Thomas Biber, Appeal No. 2004-2131, Application No. 10/016,719. Available at <http://www.uspto.gov/web/offices/dcom/bpai/decisions/fd042131.pdf> and via the Patent Office's public Image File Wrapper database for the application in question. The opinion is not for publication and not binding precedent of the BPAI.]

Claims 2-18

Claims 2-18 each depend on, and include all limitations of claim 1. Accordingly, Applicants respectfully submit that these dependent claims are all allowable for at least the same reasons, discussed above, as is claim 1.

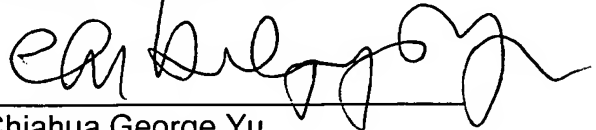
Applicants further respectfully submit that the dependent claims are further allowable for the features that they themselves recite. Applicants respectfully point out that these dependent claims, as modified, do recite structural configuration and do not rely merely on intended use for their additional features.

For example, the Office Action contended that Colbert discloses "a mounting element such as a precision translation stage(s) having movement capabilities in the XYZ directions. Mounting requires a minimum of two precision stages". Applicants respectfully disagree with this characterization of Colbert. The cited portions of Colbert that describe such features (namely, the cited cols. 7 and 9 of Colbert) describe these as features on a probe apparatus. The probe apparatus is not a part of Colbert's apparatus of Colbert's FIG. 10. On the contrary, the probe apparatus is merely an end product that is built to include fibers. While such fibers may be produced by Colbert's system of FIGS. 10 and 11, the probe apparatus itself is not part of Colbert's system of FIGS. 10 and 11.

CONCLUSION

Therefore, Applicants submit that their invention as currently claimed is allowable, and it is respectfully requested that the application be passed to allowance.

Respectfully submitted,



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